Formulations A and B are shown in the following table.

INGREDIENT	FORMULATION (wt %) A	B
PVA	0.75	0.75
HEC	0.5	0.5
Sodium phosphate	0.67	—
Sodium biophosphate	0.017	—
Boric acid	—	0.35
Sodium borate	—	0.11
Mannitol	—	2.0
Disodium edetate	0.1	0.1
Sodium chloride	0.458	0.153
Polysorbate 80	0.005	0.005
Benzalkonium chloride	0.01	0.01
Purified water	q.s.	q.s.

Formulations A and B were tested against FDA challenge organisms. The log reductions after 1 hour are tabulated below:

TEST ORGANISM	FORMULATION (log reduction) A	B
A. niger	2.1	4.4
B. albicans	4.0	5.3
P. aeruginosa	5.3	5.3
S. aureus	5.5	5.2
E. coli	5.5	5.5

The results shown above indicate that Formulation B (containing borate-polyol complex) has a broader spectrum of activity than Formulation A (containing phosphate buffer), and has greater activity against certain organisms, such as *A. niger.*

EXAMPLE 11

The following study compared the antimicrobial preservative efficacy of two unpreserved saline solutions identical except that one contained a borate-polyol complex of the present invention (Formulation C) and the other contained the conventional borate buffer (Formulation D).

An organism challenge approach based on the British Pharmacopoeia ("BP") 1988 Test for Efficacy of Preservatives in Pharmaceutical Products was used to evaluate the antimicrobial preservative efficacy of Formulations C and D. Formulation samples were inoculated with known levels of *A. niger* and sampled at predetermined intervals to determine if the system was capable of killing or inhibiting the propagation of organisms introduced into the products.

Formulations C and D are shown in the following table.

INGREDIENT	FORMULATION (wt %) C	D
Boric acid	1.0	1.0
Sodium borate	0.2	0.2
Mannitol	1.5	—
Sodium chloride	—	0.3
Disodium edetate	0.1	0.1
NaOH and/or HCl	pH 7.4	pH 7.4
Purified water	q.s.	q.s.

The results indicated that there was a 3.1 log reduction of *A. niger* with Formulation C and only 1.2 log reduction with Formulation D after 7 days. Formulation C met the BP standards for preservative efficacy against *A. niger*, while Formulation D failed to meet the BP standards.

EXAMPLE 12

The following study compared the antimicrobial preservative efficacy of two disinfecting solutions identical except that one contained a borate-polyol complex of the present invention (Formulation E) and the other contained the conventional borate buffer (Formulation F).

An organism challenge approach based on the BP 1988 Test for Efficacy of Preservatives in Pharmaceutical Products was used to evaluate the antimicrobial preservative efficacy of Formulations E and F. Formulation samples were inoculated with known levels of *A. niger* and sampled at predetermined intervals to determine if the system was capable of killing or inhibiting the propagation of organisms introduced into the products.

Formulations E and F are shown in the following table.

INGREDIENT	FORMULATION (wt %) E	F
Boric acid	0.3	0.35
Sodium borate	0.11	0.11
Mannitol	0.85	—
Sodium citrate	0.56	0.56
Citric acid	0.021	0.21
Sodium chloride	0.48	0.48
Pluronic P103	0.5	0.5
Disodium edetate	0.05	0.05
Polyquad ®	0.001	0.001
NaOH and/or HCl	pH 7.0	pH 7.0
Purified water	q.s.	q.s.

The results indicate that there was a 2.1 log reduction of *A. niger* with Formulation E and only 1.1 log reduction with Formulation F after 7 days. Formulation E met the BP standards for preservative efficacy against *A. niger*, while Formulation F failed to meet the BP standards.

The invention has been described by reference to certain preferred embodiments; however, it should be understood that it may be embodied in other specific forms or variations thereof without departing from its spirit or essential characteristics. The embodiments described above are therefore considered to be illustrative in all respects and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description.

What is claimed is: